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U.S. DEPARTMENT OF AGRICULTURE

Cooperative
ECONOMIC INSECT REPORT

Issued by

PLANT PEST CONTROL DIVISION
AGRICULTURAL RESEARCH SERVICE
UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

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Survey and Detection Operations
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Volume 9 September 11, 1959 Number 37

COOPERATIVE ECONOMIC INSECT REPORT

Highlights of Insect Conditions

CORN EARWORM larvae are critical on soybeans in eastern Virginia and are light to moderate on soybean pods in Maryland. Moths abundant and larvae damaging to late-planted sweet corn in Wisconsin. (p. 841). HESSIAN FLY surveys reported from Missouri and Nebraska. Percent infestation increased in Missouri. (p. 841, 842). VELVETBEAN CATERPILLAR causing severe damage to soybeans and peanuts and MEXICAN BEAN BEETLE serious on soybeans in southern Alabama. (p. 844).

SPIDER MITES heavier than for some years in pear orchards in Medford area of Oregon and causing serious damage to apple orchards in many parts of Utah. PEAR PSYLLA infestations heavier this year in Willamette Valley of Oregon than anytime previously noted. (p. 845).

BOLLWORMS continue to increase and are causing considerable damage to cotton in Tennessee. (p. 848).

SCREW-WORM infestations reported in Madison Parish, Louisiana, and in Canadian County, Oklahoma. (p. 851).

INSECT DETECTION: New State records include Musca autumnalis in New Hampshire, Vermont, Delaware, New Jersey and West Virginia (p. 850); Ufeus sagittarius in Wyoming (p. 849); and Aphaenogaster fulva in Florida (p. 852). New United States records include a katydid (Meconema thalassina) on Long Island, New York, and an ant (Prionopelta sp.) in Florida. (p. 852). M. thalassina is not known to be of economic importance. The specimens of Prionopelta sp. collected represent the first species of this genus found in the United States.

ADDITIONAL NOTES (p. 852).

Report of 1959 infestation and damage by meadow spittlebug to alfalfa and clover in Indiana. (p. 855).

Status of some IMPORTANT INSECTS in the United States. (p. 857).

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Reports in this issue are for the week ending September 4, unless otherwise designated.

WEATHER OF THE WEEK ENDING SEPTEMBER 7

Unseasonable heat over a large portion of the Nation from the desert southwest across the center of the country to New England and the Great Lakes continued to be the main weather feature as September began. Brief relief from the persistent warmth was felt from the central and northern Great Plains to the Middle Atlantic States as cool, dry air moved southeastward at midweek. Minimum temperatures dropped to the 40's as far south as the Oklahoma Panhandle, and the 36° reading at Valentine, Nebraska, on Thursday was the lowest there for so early in September; but warm, humid conditions returned to most areas by the weekend. Hot, dry, southerly winds spread record-high temperatures across areas of the western Great Plains and central Rocky Mountains over the weekend. North Platte, Nebraska, recorded 101° and Lander, Wyoming, 92° on Monday, their highest temperatures for so late in the season. Warm, humid air covering the Atlantic Coastal States most of the week prevented effective night-time radiational cooling, keeping minimum temperatures mostly in the 70's as far north as New England through the 3rd and producing much above normal temperatures.

Hot, summer weather was temporarily moderated by almost daily scattered showers and thunderstorms from central Texas and Oklahoma eastward to the south Atlantic Coast. Moderate to heavy precipitation totals were recorded in many areas of the Southeastern, Middle Atlantic and Northeastern States, in Missouri and Arkansas, over most of Ohio and from western Wisconsin to the Eastern Dakotas. In the Pacific Northwest and northern Rocky Mountains, cloudy and showery weather held temperatures below seasonal levels. Precipitation was substantial along the coast of Washington and in scattered areas of northern Idaho, but generally light elsewhere. No precipitation of consequence was reported in the region from northern California and Wyoming southward. Ranges are very dry in this area, except in New Mexico and eastern Arizona, where good moisture has been received in the past few weeks.

Day-time temperatures from Colorado and extreme western Texas to Arizona and southern Idaho were unusually high, reaching the high 90's and exceeding 100° in many sections. El Paso, Texas, recorded 100° or above on the 2nd, 3rd, 6th and 7th, making this the first September in 70 years during which more than one 100° reading has been recorded there. (Summary supplied by the U. S. Weather Bureau).

CEREAL AND FORAGE INSECTS

CORN EARWORM (Heliothis zea) - VIRGINIA - Larvae have become critical on soybeans most eastern counties of the State and outbreaks are quite general from the North Carolina state line to King George County. In some counties, infestations heavy enough to warrant controls in spotted localities. Practically all fields in area that were planted following small grains are in danger of having entire crop of beans destroyed. Although H. zea is primary insect pest present in soybean fields, Pseudaletia unipuncta, Laphygma frugiperda and Anticarsia gemmatalis were also present. (Morris). In Westmoreland County, outbreak one of heaviest ever experienced. Of approximately 5,000 acres of soybeans in county, 75 percent need treating or have been treated. (Dawson, Ptucha). MARYLAND - Light to moderate soybean pod infestations in all sections. (U. Md., Ent. Dept.). DELAWARE - Young larvae common in soybeans and alfalfa throughout State, as many as one per sweep. Adults abundant in corn, alfalfa and soybeans. (Burbutis, Mason). INDIANA - Infesting 90 percent of sweet corn ears harvested September 3 in La Porte County. Small larvae common; less than 15 percent in last instar. (Gould). WISCONSIN - Moths are probably as abundant as they have been for many years. Larvae, all instars, present in corn; damage to ears of untreated, late-planted sweet corn was observed. Treatments applied. (Wis. Coop. Sur.). MISSOURI - Late corn in north central and in central areas 100 percent infested. Counts, 0-4 larvae per ear. Earworm counts in late sorghum ranged from 4 to over 300 per 100 heads over State. (Kyd, Thomas, Munson). KANSAS - Infesting sorghum field in Riley County, about 15 percent of heads infested with less than 1 earworm per head. Very little damage evident. (Peters). OKLAHOMA - Counts in most alfalfa fields surveyed in northwest area averaged 0.4 per sweep. (VanCleave, Owens). LOUISIANA - Larvae averaged 1.5 per head on grain sorghum in Caddo Parish. (Spink). ARIZONA - Light infestations on exposed heads of millet at Bowie in Cochise County. Counts averaged one per 15 heads. (Ariz. Coop. Sur.). IDAHO - Infestation on sweet corn in southwestern area becoming more severe. In one field near Parma, about 58 percent of ears infested. (Scott).

EUROPEAN CORN BORER (Pyrausta nubilalis) - DELAWARE - Egg masses abundant on field corn throughout State. Larvae mostly fifth instar, preparing to pupate. (Burbutis, Mason). WISCONSIN - Second-brood larval development is progressing rapidly, but adults are on the wane, according to light trap catches. Damage to untreated, late-planted sweet corn observed. (Wis. Coop. Sur.). SOUTH DAKOTA - No eggs, larvae, pupae or adults found in 4 corn fields in northwest area; however, 12 percent of corn plants showed signs of damage. (Mast). NEBRASKA - Second-brood infestations appear very light. Infestations average less than one percent in 40 corn fields checked in northeast, central and east central counties. (Webb).

HESSIAN FLY (Phytophaga destructor) - MISSOURI - Stubble survey for 1959 showed an increase in percent infestation in all districts. The northwest, northeast and west central districts were the highest in the State. The table below lists the percent infestation by districts, compared with those in 1958.

	Average Percent Infestation	
District	1958	1959
Northwest	4.3	11.9
North Central	2.3	8.1
Northeast	3.4	11.3
West central	3.3	10.5
Central	1.8	8.1
East central	1.2	2.0
Southwest	2.2	7.9
South central		1.5
State average	2.6	9.1

(Kyd, Thomas, Munson)

NEBRASKA - Samples taken from counties in south central and southwestern areas were about 75 percent infested with numbers ranging 2-34 per 50-stem sample. From 2-28 percent of stalks per sample were infested and parasites were present in about 70 percent of the infested samples. (Webb).

SUGARCANE BORER (Diatraea saccharalis) - TEXAS - Extremely heavy in late grain sorghum in Brazos River bottoms. (Randolph).

SORGHUM WEBWORM (Celama sorghiella) - MISSOURI - Counts in sorghum heads (still green) in west central and southwest ranged 0-4 larvae per head. Larvae observed as far north as central Randolph County. (Kyd, Thomas, Munson). KANSAS - Causing damage to sorghum in Crawford and Montgomery Counties. (Gates). OKLAHOMA - Counts averaged 2-3 per head in late-planted grain sorghum in Guthrie area (Henderson) and heavy infestations noted in grain sorghum fields checked in Choctaw and southern half of Pushmataha Counties (Bower). None found most grain sorghum fields checked in northwestern area. (VanCleave, Owens).

STALK BORER (Papaipema nebris) - KANSAS - Infesting sorghum fields in Finney and surrounding counties. Damage varies, but it has not been too serious. (DePew).

SORGHUM MIDGE (Contarinia sorghicola) - LOUISIANA - Heavy, localized infestations on grain sorghum in Caddo Parish. (Spink).

SOUTHERN GREEN STINK BUG (Nezara viridula) - TEXAS - Heavy infestations on late grain sorghum in Brazos River bottoms. (Randolph).

CHINCH BUG (Blissus leucopterus) - LOUISIANA - Heavy infestations on grain sorghum in Caddo Parish. (Spink).

A PLANTHOPPER (Sogata orizicola) - LOUISIANA - Survey of 25 properties, consisting of 4,770 acres, in East Carroll Parish for this vector of hoja blanca disease of rice was completed, with negative results. (Spink).

WHEAT CURL MITE (Aceria tulipae) - KANSAS - At extremely low level throughout State. (Somsen).

A CHINCH BUG (Blissus sp.) - TEXAS - Heavy infestations on St. Augustine grass lawns in Smith County. (Texas Coop. Rpt., Aug. 21).

MITES - ARIZONA - Heavy populations of an eriophyid in Bermuda grass lawns in Maricopa County, probably helping to cause a rosette appearance of plants. (Ariz. Coop. Sur.).

A THRIPS - NEW MEXICO - Preventing formation of seed in blue gramma grasses on rangeland in Roy-Mosquero area, Harding County. (N. M Coop. Rpt.).

CORN ROOTWORMS (Diabrotica spp.) - WISCONSIN - Adults of D. longicornis have eaten emerging silks of corn in some localities, large numbers present. (Wis. Coop. Sur.). ILLINOIS - Large numbers of D. undecimpunctata howardi and D. longicornis adults present in clover and alfalfa fields. In one field, D. longicornis adults averaged over 100 per sweep. (Ill. Ins. Rpt.).

GRASSHOPPERS - INDIANA - Moderate numbers in Tippecanoe County. (Gould). MICHIGAN - Populations generally very low over Upper Peninsula. (Hutson). WISCONSIN - Adult survey has shown a general decline in populations where numbers were previously quite high. (Wis. Coop. Sur.). NEW MEXICO - Heavy infestations damaging alfalfa along margins and fence rows in fields in Cliff-Gila area, Grant County. (N. M. Coop. Rpt.). OREGON - Populations of grasshoppers, predominantly Melanoplus femur-rubrum and M. bilituratus, very low in Willamette Valley. No infestations of economic importance encountered during adult survey. (Every).

SPOTTED ALFALFA APHID (Therioaphis maculata) - ARIZONA - Few fields of susceptible varieties of alfalfa in central area have increased populations; but,in general, infestations over State remain very low. (Ariz. Coop. Sur.). NEW MEXICO - Building up in many alfalfa fields in Chaves and Eddy Counties. (N. M. Coop. Rpt.). NEVADA - Averaged 3 per sweep in alfalfa in Moapa Valley, Clark County. None found in alfalfa fields in Orovada, Humboldt County, and trace present in Elko-Lamoille areas, Elko County. (Bechtel et al., Aug. 28). OREGON - Surveys in northern Umatilla County during week of August 24 of areas infested in September 1958 were negative. (Eppley). OKLAHOMA - Light to medium populations in most alfalfa fields in northwestern area. In fields in northern Alfalfa County where counts ranged 100-1,000 plus per sweep during week of July 25, counts now 2-3 per sweep, with plants in good condition. Controls used in most fields in area. (VanCleave, Owens). Counts averaged 40 per sweep in an alfalfa field in Comanche County (Hatfield) and in an alfalfa field in Johnston County (Vinson). KANSAS - Found in all alfalfa fields examined in northeast area. Counts ranged from less than one to about 100 per sweep. (Peters). NEBRASKA - Infestations 1-60 per sweep in alfalfa in McCook area. Populations remain low at North Platte. In eastern and central counties, 10-15 percent of fields checked had some aphids present, with numbers ranging from 1 to 60 per 100 sweeps. Infestations now general in eastern and central part of State, though spotted, with a high population found in Cedar County. (Hill, Webb, Pruess). MISSOURI - Counts in southwest ranged 0-5 per sweep. (Kyd, Thomas, Munson).

PEA APHID (Macrosiphum pisi) - DELAWARE - Colonies ranged from present to abundant in alfalfa. (Burbutis, Mason). MISSOURI - Counts 2-7 per sweep on older alfalfa in north central area. (Kyd, Thomas, Munson). NEBRASKA - Populations in alfalfa in eastern counties generally below midseason levels, with average counts about 7 per 10 sweeps. (Webb). WYOMING - Average 200 per 100 sweeps in alfalfa in Torrington area. (Davison). NEW MEXICO - Light to moderate in alfalfa in Dona Ana, Hidalgo, Grant and Eddy Counties. (N. M Coop. Rpt.).

ALFALFA CATERPILLAR (Colias philodice eurytheme) - ARIZONA - Larvae and adults continue high in central and southwestern areas. In southeast, adults extremely abundant around fields, but larval counts not heavy, averaging 10 per 10 sweeps. (Ariz. Coop. Sur.). NEW MEXICO - Larvae averaged about 2 per 10 sweeps in alfalfa in Hidalgo, Grant and Dona Ana Counties. (N. M. Coop. Rpt.). OKLAHOMA - Very light in alfalfa in northwestern area. (VanCleave, Owens).

A CATERPILLAR (Nomophila noctuella) - OHIO - Continues to be destructive to summer seeded alfalfa. Additional infestations observed in Geauga and Ashland Counties. Many larvae now nearly full grown, although smaller specimens also observed. Some pupae and adults present in Wayne County. (Treece).

CABBAGE LOOPER (Trichoplusia ni) - DELAWARE - Larvae present in alfalfa in New Castle County, common on alfalfa in Sussex County and present on soybeans in Kent County. (Burbutis, Mason).

FALL ARMYWORM (Laphygma frugiperda) - DELAWARE - Larvae present in alfalfa in Kent County. (Burbutis, Mason). OKLAHOMA - Counts averaged 3 per sweep in one of 3 alfalfa fields in Choctaw County. (Goin). MISSOURI - Counts ranged 6-8 per square yard on rye in Laclede County and few noted in north central area.(Kyd, Thomas, Munson).

BEET ARMYWORM (Laphygma exigua) - TEXAS - Average 4-5 per sweep on alfalfa in Brazos and Burleson Counties. Ragging of plants apparent. (Hawkins).

WEBWORMS (Loxostege spp.) - KANSAS - Counts 0-2 per sweep in alfalfa fields in northeastern area. (Peters). MARYLAND - Larvae of L. similalis abundant and doing considerable damage to alfalfa in Dorchester and Wicomico Counties. (U. Md., Ent. Dept.).

A LEAF MINER (Liriomyza sp.) - DELAWARE - Mines prevalent in alfalfa throughout State. (Burbutis, Mason).

CLOVER SEED CHALCID (*Bruchophagus gibbus*) - OKLAHOMA - Causing extensive damage to seed alfalfa in Roger Mills County. (Burns).

THREE-CORNERED ALFALFA HOPPER (*Spissistilus festinus*) - NEW MEXICO - Very abundant in alfalfa in southern counties, often averaging as high as 6-10 per sweep. (N. M. Coop. Rpt.) TEXAS - Average 2 per sweep on alfalfa in Brazos and Burleson Counties. (Hawkins). OKLAHOMA - Very light in alfalfa in northwestern area. (VanCleave, Owens).

GARDEN FLEAHOPPER (*Halticus bracteatus*) - DELAWARE - Adults and nymphs remain common on soybeans in Kent and Sussex Counties. (Burbutis, Mason). INDIANA - Extremely abundant on new growth of red clover in Jasper County. (Chandler). MISSOURI - Counts 12-40 adults and nymphs per sweep on older alfalfa in north central area. (Kyd, Thomas, Munson).

BLISTER BEETLES (*Epicauta* spp.) - DELAWARE - Adults of *E. pennsylvanica* remain present in alfalfa in New Castle and Kent Counties. (Burbutis, Mason). MINNESOTA - *E. pennsylvanica* populations high enough on alfalfa to cause concern to individuals in the west central district. Seed crop on older alfalfa being destroyed. (Minn. Ins. Rpt.). ARIZONA - Populations of *E. fabricii* increased in Greenlee County alfalfa. Counts average 40-50 per 100 sweeps. (Ariz. Coop. Sur.).

INSECTS ON ALFALFA - MISSOURI - Two counties in north central area had fall seeded alfalfa infested with following insects: *Loxostege similalis*, sod webworms, *Laphygma frugiperda*, *Prodenia ornithogalli*, *Agrotis ypsilon*, *Feltia subgothica* and *Colias philodice eurytheme*. Some of these fields completely destroyed; others defoliated but will recover. (Kyd, Thomas, Munson).

VELVETBEAN CATERPILLAR (*Anticarsia gemmatalis*) - ALABAMA - Causing severe damage to soybeans in south Mobile County; both adults and larvae plentiful. (Seibels). Causing severe damage to soybeans in Henry County, averaging 16 per 3 sweeps and continues to cause severe damage to peanuts in Coffee, Houston, Geneva, Henry, Dale and Barbour Counties. (Grimes). LOUISIANA - Moths very numerous in soybean fields in Acadia Parish; however, larval infestations remain relatively light. (Spink).

GREEN CLOVERWORM (*Plathypena scabra*) - VIRGINIA - Fairly numerous on soybeans on Eastern Shore and fairly numerous in practically all soybean fields surveyed in eastern area. A disease is killing many larvae. (Hofmaster, Amos, Morris). MARYLAND - Larvae infesting soybeans over State. Populations declining. (U. Md., Ent. Dept.). DELAWARE - Larvae abundant in alfalfa throughout State and prevalent on soybeans in Kent and Sussex Counties. (Burbutis, Mason). MISSOURI - Counts on late soybeans in north central area ranged 0-2 per foot of row and 0-5 in west. (Kyd,Thomas, Munson).

BEAN LEAF BEETLE (*Cerotoma trifurcata*) - VIRGINIA - Fairly numerous on soybeans on Eastern Shore and are fairly numerous in practically all soybean fields surveyed in eastern area. (Morris, Hofmaster). DELAWARE - Adults present on soybeans in New Castle and Sussex Counties. (Burbutis, Mason). MISSOURI - Counts in north central area on soybeans ranged 0-2 per foot of row and in northwest 0-4 per foot of row. (Kyd, Thomas, Munson).

MEXICAN BEAN BEETLE (*Epilachna varivestis*) - ALABAMA - Caused serious damage to soybeans in several sections of southern area. Most extensive damage in Mobile, Baldwin and Escambia Counties. (Ruffin).

RED-NECKED PEANUTWORM (*Stegasta basqueella*) - OKLAHOMA - Collected from showy partridgepea (*Chamaecrista fasciculata*) at Supply, where 13 out of 50 terminals were infested. (Manley).

FRUIT INSECTS

CODLING MOTH (Carpocapsa pomonella) - MICHIGAN - Hot weather has activated this pest in the Grand Rapids, Benton Harbor triangle. Eggs and young larvae readily found on unsprayed trees. (Hutson).

RED-BANDED LEAF ROLLER (Argyrotaenia velutinana) - MICHIGAN - Third brood on grapes in Lawton and Paw Paw, and on peaches, apples, plums and pears in Benton Harbor. (Hutson). OHIO - Injury to peaches light in northern and central areas. (Rings).

EUROPEAN RED MITE (Panonychus ulmi) - NEW JERSEY - Overwintering eggs appearing. (Ins. Dis. Newsl.). MICHIGAN - Passed a second peak population for the season around Benton Harbor, Coloma and South Haven. (Hutson). OHIO - Although declining rapidly, foliage shows much injury in orchards not receiving early season preventive sprays. (Rings).

SPIDER MITES (Tetranychus spp.) - IDAHO - Probably this group increasing on apples in Canyon County. (Scott). OREGON - T. telarius still showing up in economic numbers on pears in Medford area. Heavier than for some years. Noted drifting into orchards from nearby vegetation, possibly due to an abnormally dry year in this part of State. (Gentner). UTAH - Moderate damage to raspberry foliage in Lake Town-Lakota area of Rich County during late summer. In Utah-Cache County areas, damage developed about three weeks later than in 1958. Damage spotted and sometimes severe at present. Damage serious in apple orchards in many parts of State, especially home orchards. (Davis, Knowlton). OHIO - T. telarius still prevalent on peaches in Ashland and Licking Counties, and on cherries in Ashland County. (Rings).

PEAR PSYLLA (Psylla pyricola) - OREGON - Populations remain high in Willamette Valley orchards. Infestations heavier this year than anytime previously noted, except where vigorous control program followed. (Every).

ORIENTAL FRUIT MOTH (Grapholitha molesta) - IDAHO - A few larvae occurring in peaches in Canyon County and causing quite a problem. (Bechtolt). OHIO - Fruit injury more severe than any year since 1948 in Franklin County. (Rings).

LESSER PEACH TREE BORER (Synanthedon pictipes) - OHIO - Second-brood emergence nearly complete in northern area. Heavy on older trees in Franklin, Mahoning, Columbiana, Licking and Wayne Counties. (Rings).

CATFACING INSECTS - OHIO - Injury to peaches higher than normal in northern fruit areas. (Rings).

FALL WEBWORM (Hyphantria cunea) - LOUISIANA - Heavy on pecan trees in Tensas, Madison and East Carroll Parishes. (Spink).

HICKORY SHUCKWORM (Laspeyresia caryana) - OKLAHOMA - Averaged 5 per 100 nuts on some pecan trees in Atoka County. (Bower, Meharg).

WALNUT BLISTER MITE (Aceria erinea) - OREGON - Heavily infesting early variety walnuts near Dundee, week of August 31. Determined by G.W. Krantz. (Jones).

GRAPE BERRY MOTH (Paralobesia viteana) - MICHIGAN - Eggs from overlapping second and third-brood females easily found in the Paw Paw, Mattawan, Lawton, Coloma, Benton Harbor area. (Hutson).

LEAFHOPPERS - NEW MEXICO - Severely damaging foliage on grapevines at Las Cruces, Dona Ana County. (N.M. Coop. Rpt.).

Citrus Insect Situation, Lake Alfred, Florida, August 31, 1959 - PURPLE SCALE (Lepidosaphes beckii) activity held at the very low level of mid-August and will continue low through October. FLORIDA RED SCALE (Chrysomphalus aonidum) activity increased during the last two weeks but will decline during next two weeks. Infestations will remain near the present average level through September. CITRUS RED MITE (Panonychus citri) experienced a further decline in activity which resulted in infestations dropping to a record low level. An upward trend is expected in late September but populations generally will remain below average through October. CITRUS RUST MITE (Phyllocoptruta oleivora) dropped sharply in activity since mid-August; infestations are below average levels. Activity will start to increase within the next two weeks and will again be abundant during October and November. (Simanton et al.).

TRUCK CROP INSECTS

POTATO APHID (Macrosiphum solanifolii) - PENNSYLVANIA - Building up rapidly on potato foliage in Cambria County. (Udine). UTAH - This species and Myzus persicae were generally light to moderate in potato fields this season throughout the State. (Knowlton).

LEAFHOPPERS - UTAH - Empoasca filamenta damaging potato foliage near Ogden. (Knowlton). MICHIGAN - E. fabae numerous in Upper Peninsula potato fields. (Hutson). VIRGINIA - E. fabae abundant on fall potatoes in Accomack and Northampton Counties. (Greenwood, Hofmaster).

POTATO FLEA BEETLE (Epitrix cucumeris) - VIRGINIA - Abundant on fall potatoes in Accomack and Northampton Counties. (Greenwood, Hofmaster).

POTATO TUBERWORM (Gnorimoschema operculella) - VIRGINIA - Infesting nearly every plant of fall potatoes in one field near Craddockville and in field plots at Painter. (Hofmaster).

HORNWORMS (Protoparce spp.) - NEW JERSEY - P. quinquemaculata moth flights and eggs very numerous. (Ins. Dis. Newsl.). VIRGINIA - Heavy in localized pepper plantings on Eastern Shore. (Hofmaster). NEW MEXICO - A problem in improperly treated tomato and chili fields in Hidalgo, Luna and Dona Ana Counties. (N. M. Coop. Rpt.).

EUROPEAN CORN BORER (Pyrausta nubilalis) - NEW JERSEY - Moth flights at some traps are at peak, as high as first brood in late May. Late sweet corn and possibly peppers will take serious losses unless treated. (Ins. Dis. Newsl.). DELAWARE - Light in treated pepper fields and up to 100 percent infestations in untreated fields. (Burbutis, Mason).

TOMATO FRUITWORM (Heliothis zea) - NEW JERSEY - Larger number of moths trapped this year than in 1958, 1957 and 1956. Eggs and larvae very numerous on tomatoes, field corn and lima beans. (Ins. Dis. Newsl.). DELAWARE - Remains abundant in lima bean fields over State. (Burbutis, Mason). NEW MEXICO - Eggs very abundant on lettuce in Dona Ana County. (N. M. Coop. Rpt.) UTAH - Damage has been generally light throughout the State. Occasionally moderately severe in southern area. (Knowlton).

WESTERN SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata) - OREGON - Larvae causing localized damage to tomatoes in Willamette Valley by entering fruits touching ground. (Every).

A WHITEFLY (Trialeurodes sp.) - DELAWARE - Adults common in lima beans, statewide, and squash in Kent and Sussex Counties. Prevalent on snap beans in Sussex County. (MacCreary, Burbutis, Mason).

YELLOW-STRIPED ARMYWORM (Prodenia ornithogalli) - DELAWARE - Present on lima beans and very common on pumpkin squash in Sussex County, causing moderate feeding injury. (Burbutis, Mason).

MEXICAN BEAN BEETLE (Epilachna varivestis) - WYOMING - Continues to defoliate maturing bean plants in southeast area. (Davison).

FLEA BEETLES (undetermined) - INDIANA - Causing serious damage to turnips in Tippecanoe County. (Gould).

DIAMONDBACK MOTH (Plutella maculipennis) - OREGON - Relatively low numbers in Willamette Valley fields, but controls necessary. Slightly more abundant now than at this time in 1958. (Every).

CABBAGE APHID (Brevicoryne brassicae) - OREGON - Relatively low in numbers in Willamette Valley fields, but controls necessary. (Every).

IMPORTED CABBAGEWORM (Pieris rapae) - DELAWARE - Larvae and pupae numerous on horseradish in Kent County, causing moderate feeding injury. (Burbutis, Mason). OREGON - Relatively light in Willamette Valley fields, but controls necessary. Slightly more abundant now than at this time in 1958. (Every).

A FIELD CRICKET (Acheta sp.) - ARIZONA - Moderate infestations damaging small lettuce along the edges of a few fields in Maricopa County. (Ariz. Coop. Sur.).

CABBAGE LOOPER (Trichoplusia ni) - NEW JERSEY - Up to 10 eggs per leaf on crucifers and lettuce. (Ins. Dis. Newsl.). VIRGINIA - Continues to increase on cole crops. (Hofmaster). SOUTH CAROLINA - Damaging collards in Lee County. (Nettles et al.). NEW MEXICO - Larvae heavy on young lettuce in Dona Ana County; eggs also very numerous. (N. M. Coop. Rpt.). ARIZONA - Light on lettuce in Maricopa and Cochise Counties. (Ariz. Coop. Sur.). OREGON - Relatively low in numbers in Willamette Valley fields, but controls necessary. Populations much less than at this time in 1958. (Every).

A CUCUMBER BEETLE (Diabrotica undecimpunctata tenella) - NEW MEXICO - Damaging young lettuce plants in Dona Ana County. (N. M. Coop. Rpt.).

BEET ARMYWORM (Laphygma exigua) - ARIZONA - Light populations continuing on lettuce in Maricopa County. (Ariz. Coop. Sur.).

A PYRAUSTID (Diaphania sp.) - NEW JERSEY - Serious on cantaloup and winter squash in Gloucester County. (Ins. Dis. Newsl.).

SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata howardi) - MICHIGAN - Numerous over all the Upper Peninsula. (Hutson). VIRGINIA - Increasing in cucurbits. (Hofmaster).

STRIPED CUCUMBER BEETLE (Acalymma vittata) - VIRGINIA - Increasing on cucurbits. (Hofmaster).

BANDED CUCUMBER BEETLE (Diabrotica balteata) - LOUISIANA - Sweetpotatoes were severely damaged by larvae in St. Martin, Lafayette, Acadia and St. Landry Parishes this year. (Spink).

A WHITEFLY (prob. Trialeurodes vaporariorum) - IDAHO - Infesting hops in Canyon County. (Scott).

TWO-SPOTTED SPIDER MITE (Tetranychus telarius) - INDIANA - Caused serious damage to mint in Jasper and Starke Counties during mid-August. (Gould).

ALFALFA WEEVIL (Hypera postica) - NORTH CAROLINA - Adults feeding on fruit of strawberry in Orange County, May 12. Determined by R. E. Warner. (Barnes).

COTTON INSECTS

BOLL WEEVIL (Anthonomus grandis) - LOUISIANA - Degree of infestation ranged medium to heavy in Richland and Caldwell Parishes, medium in Ouachita Parish and averaged 28 percent in Tensas Parish. (Spink). In Madison Parish, infestation ranged 11-97 percent and averaged 47 percent. (Smith et al.). TENNESSEE - Continued migration to the north,but are moving slower than in 1958. Where blooms can be found in southern counties, as many as 10 adults can be found in a single bloom. Some fields past damage stage, but others are losing cotton. (Locke). MISSOURI - Of 373 fields scouted, 43 were infested. Ranged 0-35 percent punctured squares. (Kyd, Thomas, Munson). OKLAHOMA - Averaged 60 percent infested squares in 4 fields in Muskogee and McIntosh Counties (Washum); 9 percent in three of 4 fields in Pontotoc County (Meharg); 70 percent in 3 fields in Choctaw County (Goin); and 17 percent in 14 of 18 fields in southwestern area (Hatfield).

BOLLWORMS (Heliothis spp., et al.) - LOUISIANA - Light to medium on cotton in Tensas, Richland, Ouachita and Caldwell Parishes. (Spink). Averaged 2 percent infested squares in 31 of 43 fields surveyed in Madison Parish. Moth population high and egg deposition heavy past 10 days, however control measures adequate. In 63 of 65 fields surveyed, counts averaged 8.18 eggs and 0.65 larva per 100 terminals. (Smith et al.). TENNESSEE - Continue to increase and are causing considerable damage over cotton-growing area. All larval instars can be found. (Locke). MISSOURI - Of 373 fields surveyed, 205 infested. (Kyd, Thomas, Munson) OKLAHOMA - Counts averaged 5 percent infested squares in four fields surveyed in Muskogee and McIntosh Counties (Washum); ranged 6-32 percent in 3 fields inspected in Choctaw County (Goin); averaged 5 percent in 8 of 18 fields in the southwestern area (Hatfield). ARIZONA - Increasing in cotton statewide with considerable damage in many fields. (Ariz. Coop. Sur.). NEW MEXICO - Generally light with occasional heavy spots in cotton-growing areas of State. (N.M. Coop. Rpt.).

PINK BOLLWORM (Pectinophora gossypiella) - NEVADA - Light trap surveys negative through August 26 in Clark and Nye Counties. (Parker, Aug. 28). ARIZONA - For this season up to September 5, 13 moths have been collected in light traps. Recently, 3 fields found infested with larvae near Safford in Graham County and 1 larva found on a lint cleaner near Gila Bend in Maricopa County. (Ariz. Coop. Sur.).

COTTON LEAFWORM (Alabama argillacea) - LOUISIANA - Considerable ragging to cotton in Acadia Parish. (Spink). OKLAHOMA - Ranged 5-150 per ten feet of row and averaged 52 in 6 fields surveyed in Tillman County. (Hatfield). NEW MEXICO - Occasional larva found in cotton fields in Hidalgo and Dona Ana Counties. Several heavy infestations found in Luna and Eddy Counties. (N.M. Coop. Rpt.) ARIZONA - Light in some Greenlee and Graham County fields. (Ariz. Coop. Sur.).

SALT-MARSH CATERPILLAR (Estigmene acrea) - ARIZONA - Continuing heavy in a few fields northwest of Phoenix and in the Buckeye area. Light in some Yuma and Pinal County fields. (Ariz. Coop. Sur.).

COTTON LEAF PERFORATOR (Bucculatrix thurberiella) - ARIZONA - Continues to increase gradually in many Maricopa and Pinal County fields. Continues heavy in some Yuma County fields. (Ariz. Coop. Sur.).

LYGUS BUGS (Lygus spp.) - ARIZONA - Continue heavy in many cotton fields over State. In many cases, they are moving out of dry alfalfa fields to cotton and causing heavy damage to top crop of squares. (Ariz. Coop. Sur.).

APHIDS - TENNESSEE - Present in a large number of fields and will probably increase. (Locke). NEW MEXICO - Aphis gossypii generally light in cotton fields in Luna, Hidalgo and Dona Ana Counties. (N.M. Coop. Rpt.).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

NANTUCKET PINE MOTH (Rhyacionia frustrana) - PENNSYLVANIA - Beginning to pupate in Chester County. Some larvae dead in shoots of red pine in same area, probably due to fungus. (Drooz).

A PINE MOTH (Rhyacionia adana) - MICHIGAN - Reported from Otsego, Kalkaska, Dickinson, Gogebic and Schoolcraft Counties on red pine. (Hutson).

PINE WEBWORM (Tetralopha robustella) - PENNSYLVANIA - Fairly heavy on a small plantation of Scotch pine in Union County. (Gesell).

BLACK TURPENTINE BEETLE (Dendroctonus terebrans) - ARKANSAS - Infestations increased in Bismarck-Sheridan-Arkadelphia triangle. Usually single trees, or small groups of trees, were affected. Controls applied in some cases. (Ark. For. Pest Rpt., August). ALABAMA - Activity increasing in Winston County. (Stewart).

COLLEY SPRUCE GALL APHID (Chermes cooleyi) - OHIO - Galls unusually abundant on ornamental spruce over the State. (R. B. Neiswander).

PINE SAWFLIES - ALABAMA - Increase in Neodiprion lecontei activity reported in 600 acres of slash pine in Mobile County. (Padgett). MINNESOTA - Second-brood populations of Diprion similis reported quite damaging to jack pine in Brainerd area. White pine also being damaged, but jack pine appears to have heaviest populations and feeding injury. (Minn. Ins. Rpt.).

BAGWORM (Thyridopteryx ephemeraeformis) - DELAWARE - Larvae abundant on sycamore trees along roadside in Kent County, and causing heavy defoliation. (Burbutis, Mason).

FALL WEBWORM (Hyphantria cunea) - OHIO - More abundant throughout eastern part of the State than for several years. (Polivka).

MIMOSA WEBWORM (Homadaula albizziae) - MARYLAND - Heavily infesting honeylocust at Frostburg, Allegany County. (U. Md., Ent. Dept.). DELAWARE - Larvae abundant on several honeylocust trees in Kent County and causing severe feeding injury. (Burbutis, Mason).

WEBWORMS - DELAWARE - Larvae of Salebria afflictella and Tetralopha melanogrammos common on sweetgum in New Castle and Sussex Counties and causing noticeable feeding injury. (Burbutis, Mason).

AILANTHUS WEBWORM (Atteva aurea) - DELAWARE - Larvae and pupae common on ailanthus in New Castle County. (Burbutis, Mason).

A GRACILARIID (Phyllonorycter sp.) - WYOMING - Severe on aspen in western half of the State, with an estimated 90 percent of leaves damaged. Det. J. F. G. Clarke. (Davison).

A NOCTUID (Ufeus sagittarius) - WYOMING - Specimens collected under bark of poplar in Riverton area, Fremont County, constitute a new record for the State. Det. H. W. Capps. (Davison).

A SATURNIID (Pseudohazis eglanterina) - NEVADA - Large numbers of adults present. Females laying eggs on big sagebrush (Artemisia tridentata) in Denio area of Humboldt County. (Bechtel, Kinginger, Lauderdale, Aug. 28).

ASIATIC OAK WEEVIL (Cyrtepistomus castaneus) - DELAWARE - Adults common on leaves of pin oak in New Castle and Sussex Counties, causing light feeding injury. (Burbutis, Mason).

ELM LEAF BEETLE (Galerucella xanthomelaena) - OKLAHOMA - Damage continued to be very heavy on elms in Tulsa. Approximately 90 percent of population now in pupal stage. (Stiles).

IMPORTED WILLOW LEAF BEETLE (Plagiodera versicolora) - MASSACHUSETTS - Reported as very active on willows in many localities in the eastern portion of the State during July and August. (Perry, Lowry).

A CERAMBYCID (Crossidius sp.) - NEVADA - Adults numerous and damage to rabbitbrush (Chrysothamnus viscidiflorus) by larvae is heavy in northern Humboldt and eastern Elko Counties. (Bechtel, Kinginger, Lauderdale, Aug. 28).

AN APHID (Periphyllus populicola) - WYOMING - Abundant on cottonwood trees throughout the State; causing yellowing of leaves and minor defoliation. (Davison).

ORANGE-DOG (Papilio cresphontes) - TEXAS - Attacking citrus trees in Galveston County. (Texas Coop. Rpt.).

SCALE INSECTS - MARYLAND - Lepidosaphes ulmi heavy on lilac at Mountain Lake Park, Garrett County, and Diaspis carueli infesting junipers in Allegany County. (U. Md., Ent. Dept.). TEXAS - Icerya purchasi light to medium on pittosporum in Duval County. (Texas Coop. Rpt.).

SPIDER MITES - PENNSYLVANIA - Oligonychus newcomeri caused severe browning of foliage of shadbush (Amelanchier canadensis) in Perry County during August. Det. E. W. Baker. (Drooz). MINNESOTA - Tetranychus telarius populations have built up during hot weather and many ornamentals show feeding injury. (Minn. Ins. Rpt.).

INSECTS AFFECTING MAN AND ANIMALS

MOSQUITOES - NEW MEXICO - Heavy populations of unspecified species building up from water made available from recent rains. Very annoying in and around homes. (N.M. Coop. Rpt.).

HOUSE FLY (Musca domestica) - DELAWARE - Very abundant this year and extremely annoying. (Burbutis, Mason).

A MUSCID (Musca autumnalis) - NEW HAMPSHIRE - Collected for the first time in the State from the University herd at Durham, July 22, and again August 14. Det. C. W. Sabrosky. Found to be very abundant, generally, in Strafford County. Many complaints from dairymen over the State indicating that flies on cows in pastures during the summer were unusually troublesome. M. autumnalis may be responsible for many of these complaints. A limited survey is planned. (Conklin). VERMONT - Collections made at Alburg, Grand Isle County, and at Tunbridge, Orange County, are first reports from the State. Has also been found in Chittenden, Caledonia and Bennington Counties. Det. C. W. Sabrosky. (Scott). DELAWARE - Determinations of specimens submitted from State were positive for this species. Det. C. W. Sabrosky. This is the first record for the State. See CEIR 9(34) : 784. (PPC). NEW JERSEY - Specimens submitted have been determined as this species by C. W. Sabrosky. This is the first record from the State. See CEIR 9(34) : 784. (PPC). VIRGINIA - Averaged 50-150 per animal in some herds of cattle in Highland and Bath Counties; light at one locality in Montgomery County. (Turner). Also present in Bland and Giles Counties. (Mast). WEST VIRGINIA - Positive determinations have been made of specimens submitted. This is the first record from the State. See CEIR 9(35) : 810. (PPC). ILLINOIS - Averages per animal in 3-8 cattle herds in each section in northern half of the State were 22 in east, 8 in central, 10 in western, 13 in northwestern and 26 in northeastern sections. The range was 4-50 per head. (Ill. Ins. Rpt.).

HORN FLY (Siphona irritans) - NEW MEXICO - Populations heavy on range cattle in Grant and Hidalgo Counties. (N.M. Coop. Rpt.). OKLAHOMA - Counts averaged 250 per head on 4 calves, 300 per head on 14 cows and 600 on a bull in Johnston County (Vinson); 28 per animal on 24 untreated, lactating Holstein cows at Stillwater (Mount); 600 per animal on cattle checked in Vinita area, Craig County (Campbell); and averaged 1,000 per animal on 15 cows in Lahoma area, Garfield County, with much lighter counts on other cattle in surrounding area. (VanCleave, Owens). UTAH - Annoying cattle in Lakota-Garden City area of Rich County, with counts of 75-200 per animal. Common on cattle in Box Elder County. (Knowlton).

FLIES - NEW MEXICO - Populations of several species have been extremely heavy around dairies, stockyards and corrals throughout the State. Controls have been effective in most cases. (N.M. Coop. Rpt.).

SCREW-WORM (Callitroga hominivorax) - LOUISIANA - Four authenticated cases reported in Madison Parish, involving 2 calves, one heifer and one dog. (Spink). OKLAHOMA - A yearling steer reported infested in Canadian County. (Howell).

TABANIDS - LOUISIANA - Tabanus sp. averaged 3 collected per 15-minute trapping period in Calcasieu, St. Landry, Caddo and Tensas Parishes. (Spink). OKLAHOMA - Averaged 15 per animal on 19 head of cattle checked in Johnston County. (Vinson).

CATTLE TAIL LOUSE (Haematopinus quadripertusus) - LOUISIANA - A heavy infestation observed in a small cattle herd in East Baton Rouge Parish. (Spink).

FLEAS - OKLAHOMA - Ctenocephalides felis and Pulex irritans causing a nuisance in some yards and homes in central and north central areas. (Howell).

A BROWN SPIDER (Loxosceles reclusa) - KANSAS - Three specimens collected in a home at the Garden City Experiment Station in Finney County. (DePew).

STORED-PRODUCT INSECTS

Stored-grain Insects in Alabama - INDIAN-MEAL MOTH (Plodia interpunctella), CADELLE (Tenebroides mauritanicus) and CONFUSED FLOUR BEETLE (Tribolium confusum) were extremely heavy in 2 warehouses in Mobile County, where grain is stored. CIGARETTE BEETLE (Lasioderma serricorne) and RICE WEEVIL (Sitophilus oryza) were common. Other grain insects found in light to medium numbers were Tenebrio molitor, Araecerus fasciculatus, Alphitobius laevigatus and sap beetles.

BENEFICIAL INSECTS

LADY BEETLES (Hippodamia spp.) - SOUTH DAKOTA - Averaged one per 10 sweeps in alfalfa in northwestern and west central areas. (Mast). KANSAS - Counts, primarily H. convergens, ranged 0-15 per sweep in alfalfa in northeastern area. Adults and larvae present. (Peters). OKLAHOMA - Counts of H. convergens ranged 0.1-1.5 per sweep in northwestern area alfalfa fields surveyed, with an average of about 0.5 per sweep in most fields (VanCleave, Owens); averaged 0.8 per sweep in a Comanche County alfalfa field, with an occasional adult noted in half of the cotton fields checked in southwestern area (Hatfield); and averaged 8 per sweep in an alfalfa field checked in Johnston County (Vinson).

NABIDS (Nabis spp.) - SOUTH DAKOTA - Averaged one per 10 sweeps on alfalfa in west central area of State. (Mast). KANSAS - Counts ranged 0-2 per sweep in northeastern area alfalfa. (Peters). OKLAHOMA - Counts averaged approximately 0.3 per sweep in most northwestern area alfalfa fields surveyed (VanCleave, Owens) and 0.5 per sweep in a Comanche County alfalfa field (Hatfield). IDAHO - Becoming very numerous in alfalfa and red clover seed fields in Canyon County, with as many as 40 per sweep being taken. (Waters).

LACEWINGS (*Chrysopa* spp.) - OKLAHOMA - Ranged 0-0.5 per sweep in alfalfa fields surveyed in northwestern area. (VanCleave, Owens). Eggs noted in a few cotton fields checked in southwestern area. (Hatfield). KANSAS - Counts ranged 0-2 per sweep in alfalfa in northeastern area. (Peters).

MISCELLANEOUS INSECTS

A KATYDID (*Meconema thalassina*) - NEW YORK - Specimens collected by J. K. Terres at Little Neck, Queens County, July 12 and 14, 1959, constitute a new United States record. Det. A. B. Gurney. The species inhabits nearly all of Europe, including England and Ireland. It is pale green in color and the body is about three-fourths of an inch long. It is not known to be of economic importance. It is said to live mainly on trees and to insert eggs into ridges of the bark, especially elms and oaks. (Muka).

A FIELD CRICKET (*Acheta* sp.) - RHODE ISLAND - Heavy populations entering homes and basements in Barrington and Narragansett. (Hansen, Mathewson). OKLAHOMA - Minor invasions of stores occurred in several central area towns. (Howell).

ANTS - FLORIDA - *Aphaenogaster fulva* collected in Levy County, March 14, 1958. Det. M. R. Smith. This species has not previously been reported from the State. Specimens of *Prionopelta* sp., collected in soil at Juniper Springs, Marion County, August 29, 1959, represent the first species of this genus to be found in the United States. Det. M. R. Smith. (Fla. Coop. Sur.).

A DAMPWOOD TERMITE (*Zootermopsis angusticollis*) - OREGON - Winged forms beginning to appear in abundance in western portion of the State. (Every).

ADDITIONAL NOTES

CALIFORNIA - CORN EARWORM (*Heliothis zea*) and COTTON SQUARE BORER (*Strymon melinus*) damaging hop pods in medium infestations in the Sacramento area, Sacramento County. BLACK-MARGINED APHID (*Monellia costalis*) heavy on pecan trees in Woodland and Davis, Yolo County. *Sabulodes caberata* heavy on avocado trees in the Leucadia area, San Diego County. *Platynota stultana* medium on citrus seedlings in Excondido, San Diego County. EUROPEAN EARWIG (*Forficula auricularia*) heavy in grass and damaging peach trees in Paradise, Butte County. RED-HUMPED CATERPILLAR (*Schizura concinna*) damaging walnut trees in Sonora area, Tuolumne County. *Liriomyza munda* lightly damaging melons in the Woodland area, Yolo County. TOBACCO FLEA BEETLE (*Epitrix hirtipennis*) medium and damaging beans in the Watsonville area, Santa Cruz County. TWO-SPOTTED SPIDER MITE (*Tetranychus telarius*) damaging eggplant in Winters, Yolo County. A LEAFHOPPER (*Baldulus maidis*) heavy on corn in the Hanford area, Kings County. *Platynota stultana* medium on sugar beets in the Tustin area, Orange County. CABBAGE LOOPER (*Trichoplusia ni*) heavy on cotton in the Pixley area and light in Poplar, Tulare County. Light to heavy on cotton over the San Joaquin Valley. LYGUS BUGS (*Lygus* spp.) very abundant and seriously damaging small cotton bolls; appear to be deminishing in Imperial County. *Crambus sperryellus* heavily damaging seedling lawns in Norco, Riverside County. *Aleyrodes spiraeoides* heavily damaging morning-glory at Knights Landing, Yolo County. WATERLILY APHID (*Rhopalosiphum nymphaeae*) occurring in heavy populations in the Watsonville area, Santa Cruz County. *Oligonychus aceris* medium to heavy on silver maple on nursery properties in Chino and Ontario, San Bernardino County. POTATO PSYLLID (*Paratrioza cockerelli*) heavy on Jerusalem cherry in San Francisco, San Francisco County. *Agraulis vanillae* heavy and defoliating passionvine in Woodland, Yolo County and light in Sacramento County areas. Pupating larvae of *Litoprosopus coachellae* causing household damage in many places over State. Medium damage to fur coats, books, floor coverings, clothing and fiberglass drapes in Riverside, Riverside County. (Cal. Coop. Rpt.)

LIGHT TRAP COLLECTIONS

	Pseud.	Agrot.	Laphyg.	Perid.	Protoparce		Heliothis	
	unip.	yps.	frug.	marg.	quinq.	sexta	zea	vires.
ALABAMA								
Auburn 8/26,9/2,4	60		57		14		128	1
COLORADO								
Greeley 8/19-25							1	
Longmont 8/16-24							1	
New Liberty 8/13-22							2	
Rocky Ford 8/13-19							14	
FLORIDA								
Gainesville 9/1							23	
ILLINOIS								
Urbana 8/28-9/3	436	61	1	6		20	1005	
INDIANA (Counties)								
Lawrence 8/27-9/2	32	1		4	25	85	178	
Tippecanoe 8/28-9/3	100	32		4	8	15	528	
KANSAS								
Garden City 8/26,27,31	10	25		10	1	1	53	
Hays 8/29,9/1	6	9					11	
Manhattan 8/29-9/3	44	20	7		2		352	
LOUISIANA								
Baton Rouge 8/28-9/3	29	2	100				160	
MARYLAND								
Upper Marlboro 8/26-9/2	12		4		25	19	30	
MISSOURI								
*Columbia 8/29-9/4	156	95	147		35		650	535
NEBRASKA								
Concord 8/17-22	18	7		2	2	3	76	
Kearney 8/17-21	19	1		11	5		3	3
Lincoln 8/18-29	211	495		59	4	19	203	
North Platte 8/18-24	166	43	2	31	9	10	125	14
Scotts Bluff 8/14-9/3	50	59		146	6		29	5
SOUTH CAROLINA								
Clemson 8/29-9/4	159	15	78	11		13	134	
TENNESSEE (County)								
Blount 8/25-31	9	6		7	2		69	
TEXAS								
Brownsville 8/24-28			240		1	1	32	
Waco 8/28-9/4	47	14		42			1606	29
UTAH								
Benjamin 8/24-31							2	
Ogden 8/24-31							10	
Spanish Fork 8/24-31							3	

(Continued on page 854)

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*Two traps - Columbia

LIGHT TRAP COLLECTIONS - Continued

	Pseud. unip.	Agrot. yps.	Laphyg. frug.	Perid. marg.	Protoparce quinq. sexta	Heliothis zea vires.
WISCONSIN						
Antigo 8/24-30	22	4		1		49
*Arlington 8/25-31	1432	183		300		1049
Beaver Dam 8/25-31	688					474
Fox Lake 8/25-31	471					1332
Janesville 8/25-31	70					324
Johnsburg 8/25-31	117	24				112
Middleton 8/25-31	600	64		67		198
Platteville 8/25-31	600	63				800
Ripon 8/25-31						1737
Rosendale 8/25-31						610
Stevens Point 8/18-24	132	88		16		6
*Theresa 8/25-31	315					660

ADDITIONAL COLLECTIONS- VELVETBEAN CATERPILLAR (_Anticarsia_ _gemmatalis_) - LOUISIANA, Baton Rouge (8/28-9/3) - 10. SALT-MARSH CATERPILLAR (_Estigmene_ _acrea_) - TEXAS, Brownsville (8/24-28) - 67; Waco (8/29-9/4) - 9. COTTON LEAFWORM (_Alabama_ _argillacea_)- LOUISIANA, Baton Rouge (8/28-9/3) - 2; TEXAS, Brownsville (8/24-28) - 2288.

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* Two traps - Arlington; 3 traps - Theresa

1959 Infestation and Damage by the Meadow Spittlebug to Alfalfa and Clover in Indiana

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During the past few years infestations by the meadow spittlebug (Philaneus leucopthalmus (L.)) have been increasing in Indiana. Although infestations in 1959 were high throughout all of eastern Indiana, they reached epidemic status in the southeastern counties, particularly in the areas south of New Castle and Richmond, and east of Shelbyville. These infestations are believed to be the highest on record for Indiana.

The Entomology Department conducted a survey to determine the extent of infestation and the amount of loss to the forage legume crop. Various members of the Department in their travels about the State obtained data from alfalfa and clover fields. With few exceptions every county was sampled, and in most cases three to five samples were obtained per county. Because of the number of samples from a single county, infestation data were combined and averaged in unit areas.

Losses were determined as follows: Spittlebug populations were converted from stem counts to populations per square foot by multiplying the average number of spittlebugs per stem by 40 which was estimated to be the number of stems per square foot. Damage was determined by using a figure of 10 pounds loss per acre for each spittlebug per square foot. This index for loss is based on research data from which R. T. Everly has shown a range in loss from 10 to 12 pounds acre loss per spittlebug per square foot. Although this figure would indicate considerably more loss than a ton per acre in the areas of intense infestation in the southeast, a ton per acre loss is the maximum estimated in this report. There is little doubt that losses will exceed a ton in many fields, but the index used for determining loss does not appear to be a straight line relationship under epidemic infestations.

Individual county losses have been calculated by applying the insect loss index to alfalfa and clover acreage estimate obtained from R. E. Straszheim, Agricultural Statistician. The value of the forage was determined at the rate of $15 per ton.

In general, the cost of applying insecticides to control the meadow spittlebug has exceeded the benefits obtained when populations were less than 100 spittlebugs per 100 stems. In a large part of northwestern and southwestern Indiana, the 1959 infestations were generally too low to require treatment as is shown in figure 1. However, over a wide area, the accumulated loss from minor infestation was $850,365. This was subtracted from the total State loss of over $13,000,000 to show a preventable loss of $12,191,880.

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* Samples also obtained by G. E. Gould, J. M. Macklin, and D. L. Schuder

Dollar Loss by Meadow Spittlebug in Indiana in 1959

Area	Loss
Northwest Counties	448,455
North Central Counties	832,530
Northeast Counties	2,098,080
West Central Counties	750,180
Central Counties	869,955
East Central Counties	3,280,650
Southwest Counties	283,995
South Central Counties	270,990
Southeast Counties	4,207,410
State Total Loss	$13,042,245
*Less noneconomic loss	850,365
Total preventable loss	$12,191,880

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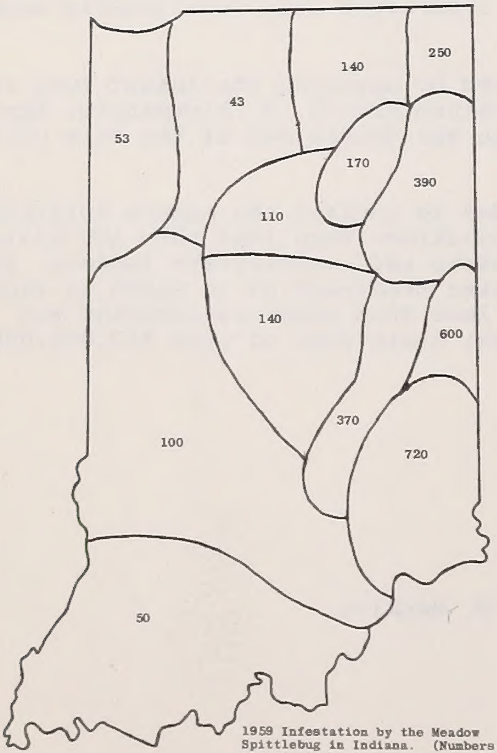
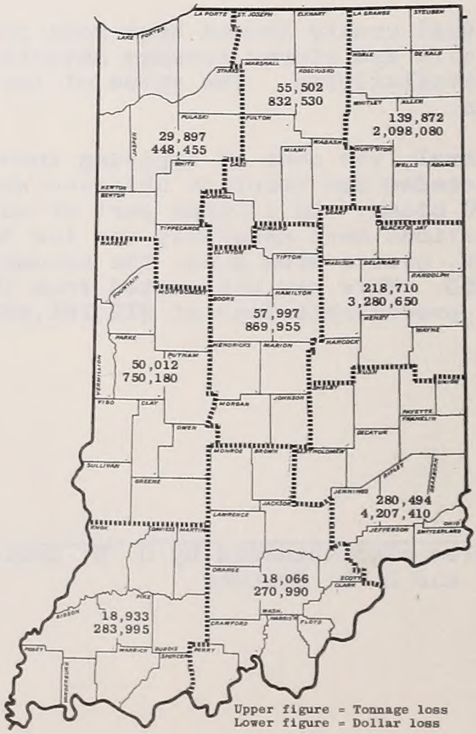
* Losses resulting from infestations of less than one spittlebug per stem are not great enough to make preventive treatments economically feasible.

Figure 1 - 1959 Infestation



1959 Infestation by the Meadow Spittlebug in Indiana. (Numbers represent the population per 100 stems.)

Figure 2 - 1959 Losses



Upper figure = Tonnage loss
Lower figure = Dollar loss

STATUS OF SOME IMPORTANT INSECTS IN THE UNITED STATES

CATTLE GRUBS (Hypoderma bovis and H. lineatum)

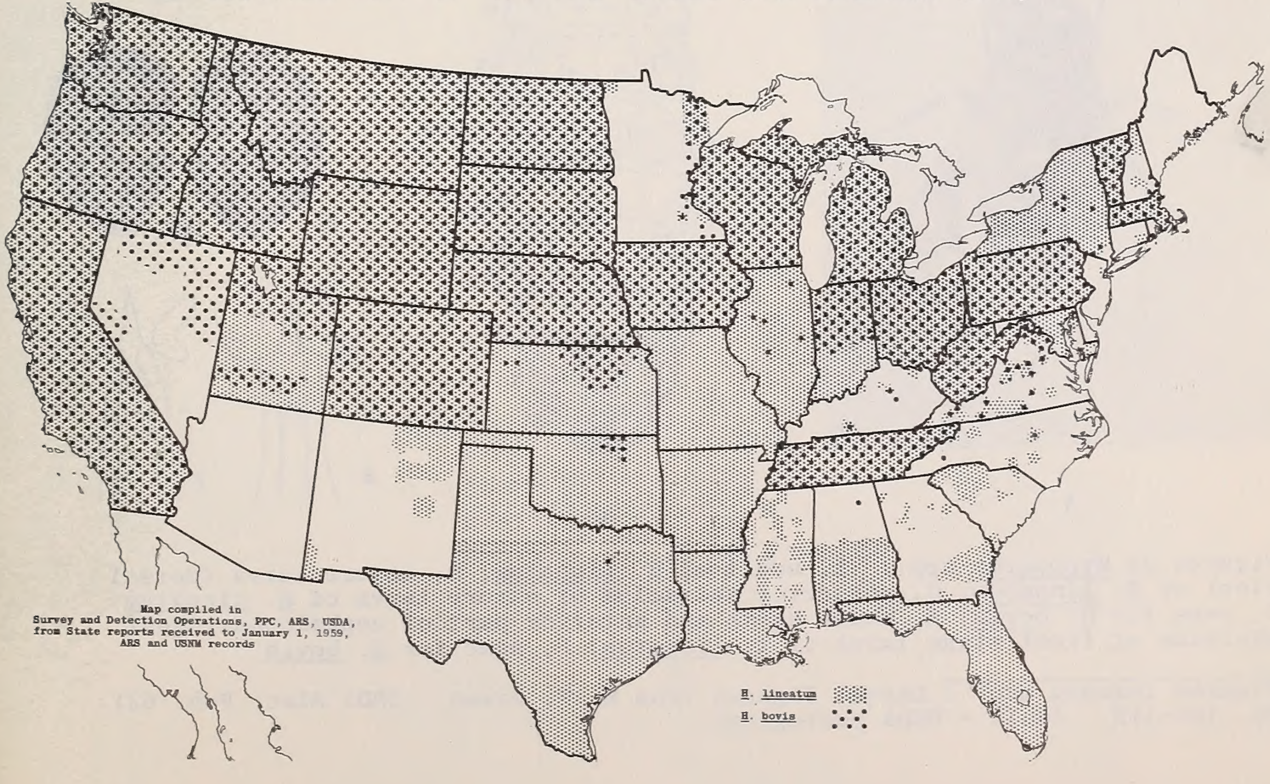
Economic Importance: Cattle grubs are highly injurious to cattle. During the period from 1940 to 1944, the average annual loss to cattle by these pests was estimated at 160 million dollars. Some of the losses to cattle caused by or attributed to cattle grubs are as follows: Reduced milk production, failure to gain properly, mechanical injury trying to escape attacks by flies, abortion, damaged hides and decreased value of carcass. Injury by H. lineatum is more severe than that of H. bovis, but H. bovis causes greater excitment to stock. Annoyance produced by penetration of newly hatched larvae is indicated by the violent licking of heels (hense another name, "heel fly"), and other places of penetration, accompanied by intermittent kicking and stamping. There are known cases of myiasis in man, sometimes being crippling or fatal, especially in children.

Distribution: Both species are widely distributed in Europe, Canada and the United States. In addition, H. bovis occurs in Africa and Japan, and H. lineatum in the Punjab region of India. H. bovis is essentially a northern form and is not as widespread as H. lineatum in the United States.

Hosts: Normal host for both species is cattle, occasionally man, but H. lineatum has also been recorded in American bison and in horses on occasion.

Life History and Habits: Eggs of H. bovis are laid singly, mainly on legs below the knee, while eggs of H. lineatum are laid in groups of 5 to 20, maily on the heels. Eggs hatch in $2\frac{1}{2}$ to 6 days. Young larvae burrow into the skin almost immediately upon hatching. Rather characteristic scabby and tender areas remain for several days after entrance. Five larval instars are passed in the host,

DISTRIBUTION OF CATTLE GRUBS *(HYPODERMA SPP.)*



Map compiled in
Survey and Detection Operations, PPC, ARS, USDA,
from State reports received to January 1, 1959,
ARS and USNM records

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